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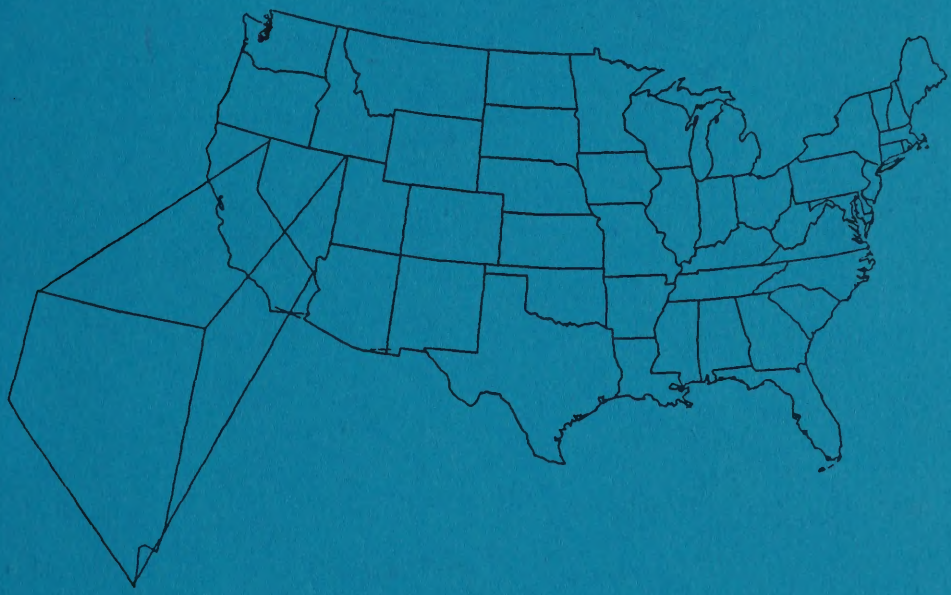
THE ROLE OF THE NONFUEL MINERALS IN THE NEVADA STATE ECONOMY AND THE COUNTIES OF ELKO, EUREKA, LANDER, NYE AND WHITE PINE



GEORGE M. SWISKO
DIVISION OF POLICY ANALYSIS
BUREAU OF MINES
U.S. DEPARTMENT OF THE INTERIOR

DECEMBER 1987

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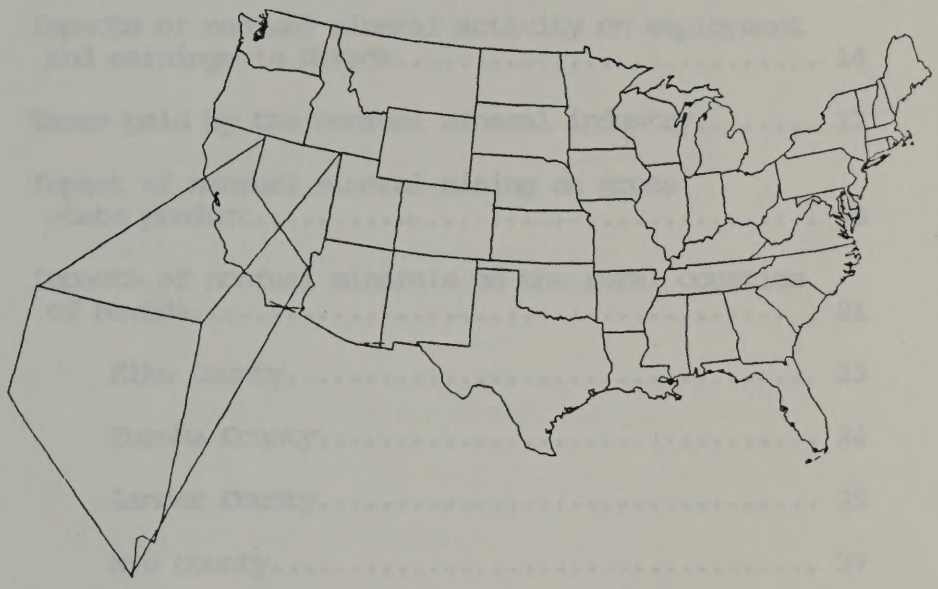

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THE ROLE OF NONFUEL MINERALS IN THE NEVADA STATE ECONOMY AND THE COUNTIES OF ELKO, EUREKA, LANDER, NYE, AND WHITE PINE

By George M. Swisko[1]

ABSTRACT

The Bureau of Mines is currently engaged in a program to determine the impacts of changes in the nonfuel mineral industries upon regional economies. As part of this program the Bureau examined the impacts on Nevada and several of its counties resulting from significant changes in nonfuel mineral production between 1981 and 1986. Regional input-output models for Nevada and the counties of Elko, Eureka, Lander, Nye, and White Pine were developed through IMPLAN, the U. S. Forest Service's economic impact model. These models generated multipliers to measure total impacts on employment, earnings, and indirect business taxes.

From 1981 to 1986 gold and silver production in Nevada grew at a faster rate than the total production of all goods and services measured by the gross state product. Other nonfuel mineral production however declined, with direct employment and earnings losses offsetting the employment and earnings gains from increased gold and silver mining. These changes also generated indirect impacts on employment and earnings for other industries, which varied for each region according to population, industrial diversification, and the types of minerals mined. Findings show that several county economies are quite sensitive to changes in nonfuel mineral production.

1 Regional economist, Division of Policy Analysis, Bureau of Mines, Washington, D. C.

INTRODUCTION

The Bureau of Mines, at the request of Congress, developed the capability to measure impacts to regional economies from changes in local nonfuel mineral production. A regional economy covers an area smaller than the nation, such as a state, county, city or town. This report for Nevada and five of its counties is one of the results of this capability. A similar study for Arizona is forthcoming, and in December 1985 the Bureau published a related study for Idaho.

The ability to measure and understand economic impacts at the State, county, and local levels is important in developing comprehensive evaluation criteria for formulating government policy options, which affect the national or international minerals markets. Analysis of these economic impacts must take into account interindustry relationships within regions, because those relationships determine the entire regional responses to changes in the local nonfuel mineral industries. Interindustry relationships are measured through direct and indirect impacts which sum to the total economic impact.

Direct impacts include employment for all mining employees plus proprietors, their earnings, and the business taxes paid by the nonfuel mineral industries. These impacts are estimated from regional data provided by government agencies. Indirect impacts include employment, earnings, and taxes from the activities of local suppliers who sell goods and services to the nonfuel mineral industries and their employees. They also include the impacts from the activities of all other businesses who sell to those suppliers, their employees, and all other suppliers and employees indirectly affected. These impacts can be estimated from regional interindustry (input-output) models.

This study provides detailed impacts on employment and earnings for specific nonfuel minerals in Nevada and several of its counties from 1981 to 1986, a period when gold and silver mining was particularly strong. It is hoped that information concerning these impacts will be useful to policy makers and planners at the Federal, State and local levels of government in developing policies affecting nonfuel mining and mineral development in Nevada.

ACKNOWLEDGMENTS

This report was prepared in the Branch of Economic Analysis, Division of Policy Analysis, under the guidance of Robert L. Adams, Branch Chief, and Stanley Miller, Division Chief. Vickie B. Boesch, economist with the Division of Policy Analysis until June 1987, provided valuable research assistance. Jean Moore and Stephen Hays, mineral data specialists in the Division of Mineral Commodities, diligently compiled and checked production data used in this study. Special acknowledgments are due the Nevada Employment Security Department and the Nevada Department of Taxation for providing essential data for estimating the impacts of specific mining industries.

NONFUEL MINERAL PRODUCTION IN THE STATE OF NEVADA

From the mid-19th century to the present, mining has been a traditional base of Nevada's economy. Located in one of the richest mineral regions of the Nation, Nevada has recently seen its mining industry far overshadowed by manufacturing, government, and tourist-related services. At the end of 1986, nonfuel mineral employment accounted for only slightly more than 1% of Nevada's total employment and almost 2% of its total earnings, yet Nevada ranked eighth among the states in the value of nonfuel mineral production, was the leading state in the Nation in the production of gold and barite, and was the sole domestic producer of mined magnesite and mercury.

Throughout the eighties the nonfuel mineral industry in Nevada, as elsewhere, experienced changes caused by shifting demand, fluctuating prices, and foreign competition. But in contrast to other regions of the United States, Nevada's total value of nonfuel mineral production increased between 1981 and 1986, growing at an average annual rate of 6% from 1981 to 1985, then increasing 55% between 1985 and 1986.

This seemingly strong performance occurred because of the exceptional growth in gold and silver mining. The quantity of gold produced in 1986 was four times as great as 1981; for silver it was two times as great. With gold and silver removed from production, however, the results are quite different. The total value of other nonfuel minerals declined 27% over the period, due largely to production cutbacks and closures in barite, copper, molybdenum and ferroalloys.

Table 1. - Comparison of Nonfuel Mineral Production in Nevada
(Millions of $)

	1981	1986
Total value	$506.7	$977.3
Total value less gold and silver	$233.5	$169.3
Minerals with significant production changes		
Gold (recoverable content of ores, etc., 1000 troy oz.)	524.8	2,098.9
	$241.2	$772.9
Silver (recoverable content of ores, etc., 1000 troy oz.)	3,039.0	6,409.0
	$32.0	$35.1
Barite (1,000 short tons)	2,482.0	184.0
	$79.7	$3.0

Source: Bureau of Mines.

Gold and silver increased the overall performance of Nevada's nonfuel mineral industry for several reasons. Besides favorable prices, three important changes occurred in the production and development stages:[2]

1. new laboratory methods allow cheaper testing of potential ore samples;

2. low-cost cyanide "heap leaching" makes possible the profitable recovery of gold and silver from ores which, until very recently, were considered to be uneconomic to process, and

3. bullion-backed financing techniques allow companies to move ahead with production on their own, instead of waiting for larger producers to develop their claims.[3]

The rise in Nevada's gold production, which in 1986 accounted for 56% of total U. S. production, resulted in gold replacing copper as the dominant mineral mined in Nevada. From the 1930's through 1977, copper mining accounted for almost 60% of the State's total mineral output value, employing approximately 1,800 people in 1977. In 1978 production began to decline when the three leading producers shut down because of poor copper market conditions and environmental restrictions. This ultimately led to the closing of Nevada's only primary copper smelter, the Kennecott smelter at McGill, with an estimated direct loss of about 300 jobs. At the end of 1986 less than 50 people were employed by copper mining in Nevada, and in spite of improvements in copper prices during 1987, no increased activity was reported.

Changes in the nonfuel mineral industries between 1981 and 1986 impacted the Nevada economy through their effects on gross state product, employment, earnings, and indirect business taxes. Furthermore, in spite of some production declines, nonfuel mineral mining remains a significant industry in many rural counties. These changes will now be examined more closely.

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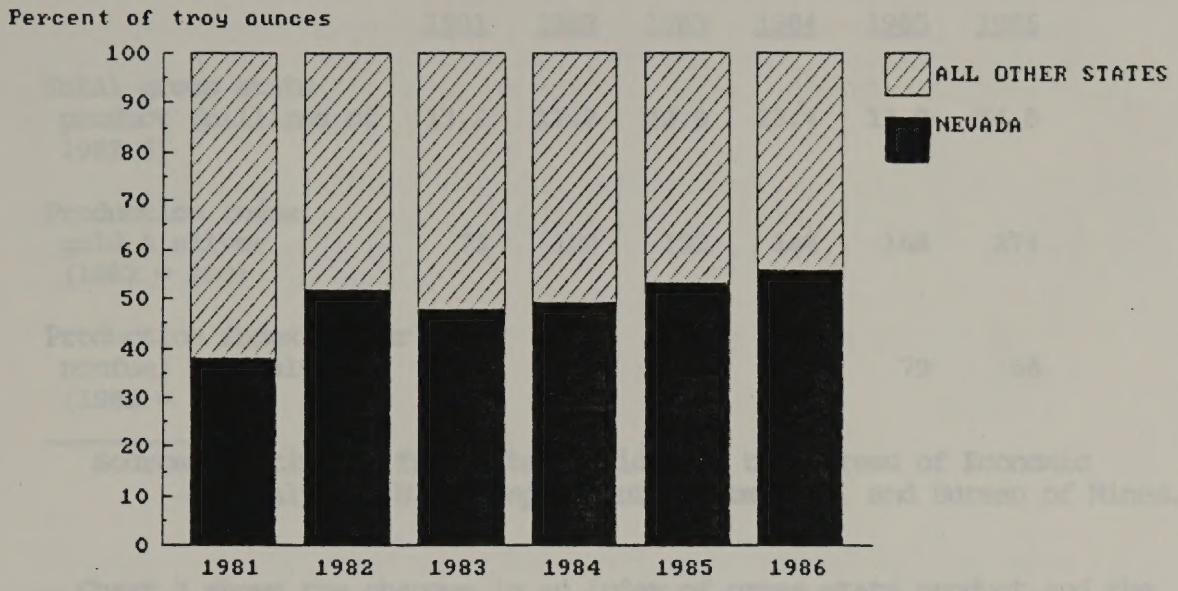
[2]Barrons. Glut in Gold? Oct. 12, 1987, p. 6.

[3]An official at The Gold Institute in Washington, D. C., gave the following description of this financing. A mining company borrows a fixed amount of gold from a lender (usually a bank or financial company), sells the gold to raise development capital, and once its mine is operational, repays the gold from the mine's own output. These loans are attractive because annual interest rates currently fall between 1.5% and 3.0%, significantly lower than those charged on bank loans or bonds.

Chart 1. NEVADA WAS THE LEADING GOLD PRODUCER
IN THE UNITED STATES FROM 1981 TO 1986



Source: Lucas, J. M., Gold. Preprint from
BuMines Minerals Yearbook 1986, p. 3.

CHANGES IN NONFUEL MINERAL PRODUCTION COMPARED TO CHANGES IN NEVADA GROSS STATE PRODUCT

To compare the performance of nonfuel mineral mining to the performance of all industries in the Nevada economy between 1981 and 1986, estimates of Nevada's gross state product, adjusted for inflation, were made and compared to indexes of the physical production of nonfuel minerals. See Table 2. Gross state product measures the dollar value of a state's newly produced goods and services that are not resold in any form during the year. Because an increase or decrease in dollar value gross state product may result from price changes, not output changes, economists value the output of any year in terms of prices of a selected year to measure changes in physical output.[4]

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[4]This allows economists to derive an estimate of the changes in the amounts of all goods and services produced, e. g., the number of new houses built, the number of restaurant meals served, the number of automobile repairs made, etc.

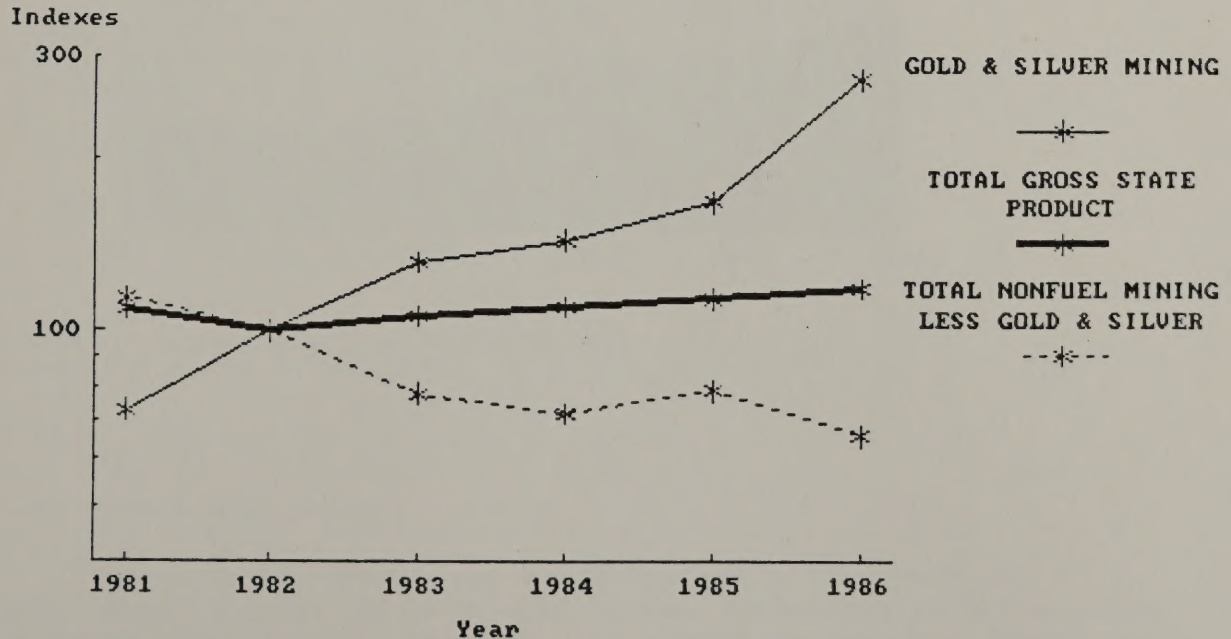
Table 2. - Nevada Gross State Product and Production Indexes for Nonfuel Minerals

	1981	1982	1983	1984	1985	1986
Total gross state product (billions of 1982 $)	13.2	12.2	12.9	13.4	13.8	14.5
Production index, gold & silver (1982 = 100)	73	100	132	144	168	274
Production index, other nonfuel minerals (1982 = 100)	114	100	78	72	79	66

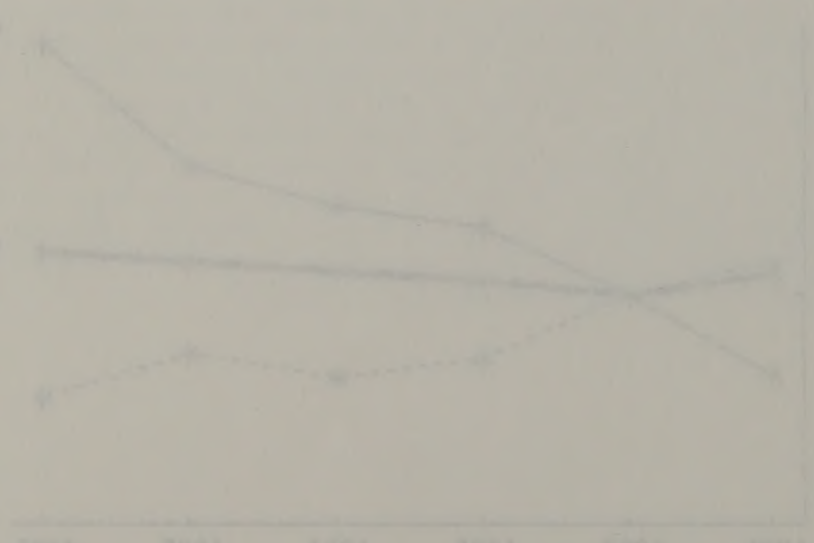
Source: Estimated from data provided by the Bureau of Economic Analysis, U. S. Department of Commerce, and Bureau of Mines.

Chart 2 shows the changes in an index of gross state product and the production indexes, giving a visual picture of how nonfuel mineral mining behaved in the Nevada economy.

CHART 2. COMPARISON OF CHANGES IN NONFUEL MINERAL PRODUCTION TO CHANGES IN GROSS STATE PRODUCT FOR NEVADA (1982 = 100)



Estimated from data provided by the Bureau of Economic Analysis, U. S. Department of Commerce, and the Bureau of Mines



Since the end of the last recession in 1982, Nevada's gross state product grew at an estimated average annual rate of 4.7% compared to 4.3% for the United States. In terms of its production index, gold and silver mining completely outperformed the Nevada economy from 1981 to 1986, increasing a remarkable 63% between 1985 and 1986. But the production index for other nonfuel minerals dropped sharply between 1981 and 1983, down 32%, and continued declining into 1986.

The production indexes provide stronger measures of actual output and eliminate the influence of price effects. Computing percent changes for the values of production and the production indexes between 1982 and 1986 gives the following results:

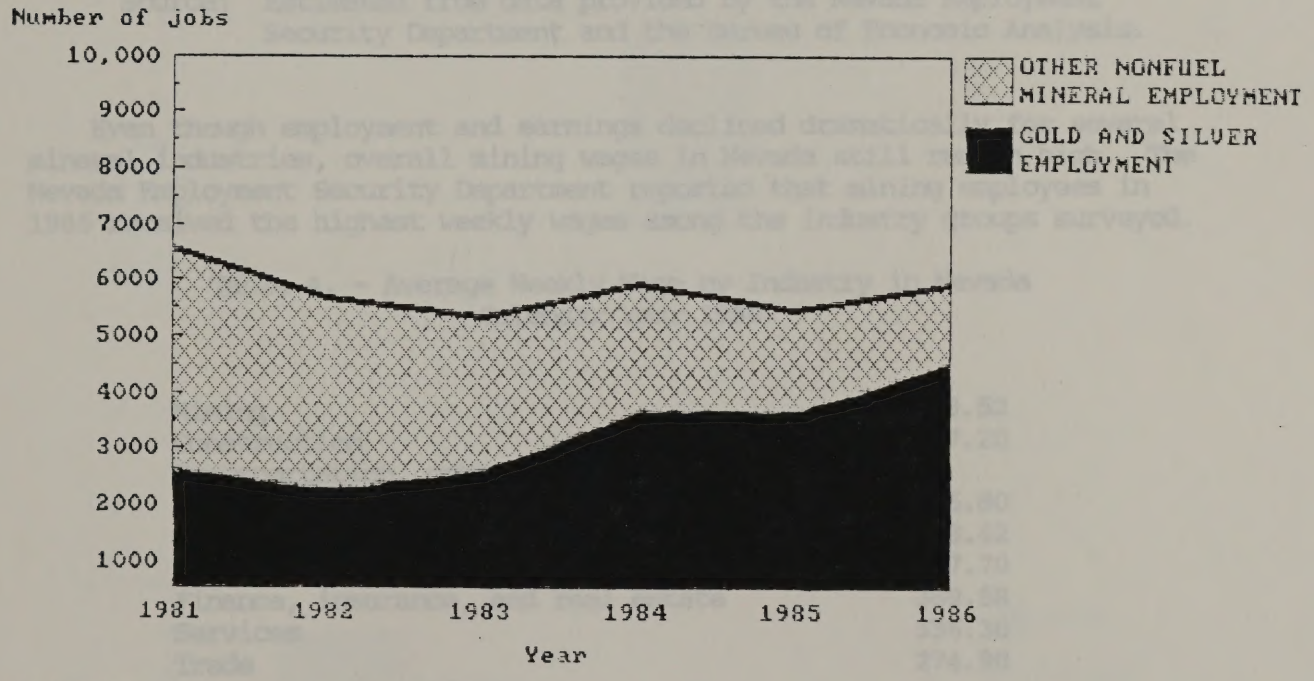
	Percent Change 1986-1982	
	Value of Production	Production Index
Gold & silver	161	174
Other nonfuel minerals	-24	-34

Actual production of gold and silver is stronger than indicated by their total value because of the volatility of gold and silver prices. For instance, the average selling price of gold in dollars per ounce in 1986 was $368.24, 2% less than the $375.91 in 1982. The results also show that the overall production of the other nonfuel minerals is poorer than indicated by their total value because of differences in price changes versus production changes. For example, the quantity of clays declined 90% between 1982 and 1986, compared to a total value decline of 77%.

IMPACTS OF NONFUEL MINERAL ACTIVITY ON EMPLOYMENT AND EARNINGS IN NEVADA

Like production, nonfuel mineral employment and earnings present mixed pictures.[5] Employment in gold and silver mining increased significantly between 1981 and 1986, up 76% to 4,524 jobs from 2,568 in 1981. This offset losses from other nonfuel mineral employment, but not enough to prevent total employment from gradually declining during the period. Gold and silver earnings increased 128% and stood at $162.7 million in 1986, compared to $71.3 million in 1981. This offset a 56% decline in total earnings for all other nonfuel minerals, $44.7 million in 1986 versus $101.6 million in 1981, and raised total nonfuel mineral earnings to $207.4 million, 20% above the 1981 figure of $172.9 million.

CHART 3. GOLD AND SILVER'S SHARE OF NEVADA NONFUEL MINERAL EMPLOYMENT INCREASED FROM 1981 TO 1986



Estimated from data provided by the Nevada Employment Security Department.

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[5]Direct nonfuel mineral employment consists of employees and proprietors in metal and nonmetallic mineral production, including cement and lime manufacturing. Earnings include wages and salaries, proprietors' income, and other labor income, such as employer contributions for all forms of insurance, retirement, and other fringe benefits.

Table 3 shows exactly how the boom in gold and silver and the decline in other nonfuel minerals changed the composition of employment between 1981 and 1986.

Table 3. - Changes in the Composition of Nevada Nonfuel Mineral Employment, Excluding Mining Services

Direct Employment	Percent of Total Nonfuel Mining Employment 1981	1986
Gold and silver mining	39	76
All other metal mining, including copper and ferroalloys	22	2
Chemical and fertilizer mining including barite	15	4
All other nonfuel minerals	24	18

Source: Estimated from data provided by the Nevada Employment Security Department and the Bureau of Economic Analysis.

Even though employment and earnings declined dramatically for several mineral industries, overall mining wages in Nevada still remain high. The Nevada Employment Security Department reported that mining employees in 1986 received the highest weekly wages among the industry groups surveyed.

Table 4. - Average Weekly Wage by Industry in Nevada Calendar Year 1986

Mining	$593.52
Construction	467.20
Transportation, communication and public utilities	446.80
Government	438.42
Manufacturing	417.70
Finance, insurance, and real estate	389.58
Services	336.30
Trade	274.90

The production changes which occurred in Nevada's nonfuel mineral industry produced indirect as well as direct impacts on employment and earnings. Increases or decreases in employment and earnings affect jobs and earnings in other industries which sell goods and services to the mining industries and their employees and proprietors. These other industries and their employees and proprietors in turn purchase

goods and services from more industries. Direct and indirect impacts, determined through input-output analysis, sum to total impacts, from which "multipliers" can be computed showing ratios of the total impacts to direct impacts. The higher the multipliers, the larger the indirect impact. Charts 4a and 4b show the impacts for the cumulative changes in employment and earnings which occurred as a result of State nonfuel mineral industry activities between 1981 and 1986.

CHART 4a. CUMULATIVE CHANGES IN IMPACTS FOR EMPLOYMENT IN NEVADA DUE TO CHANGES IN NONFUEL MINERAL MINING BETWEEN 1981 AND 1986

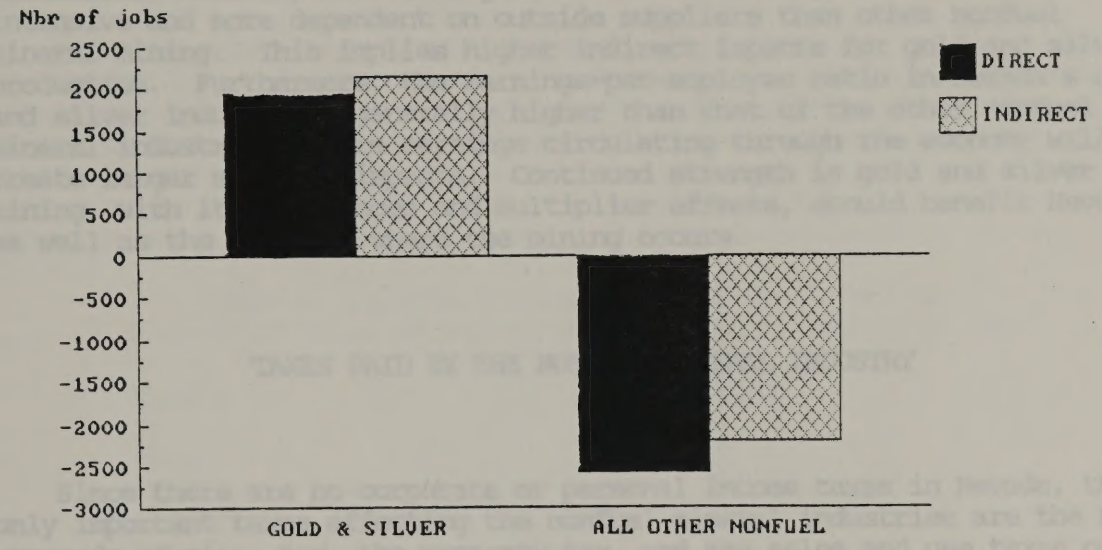
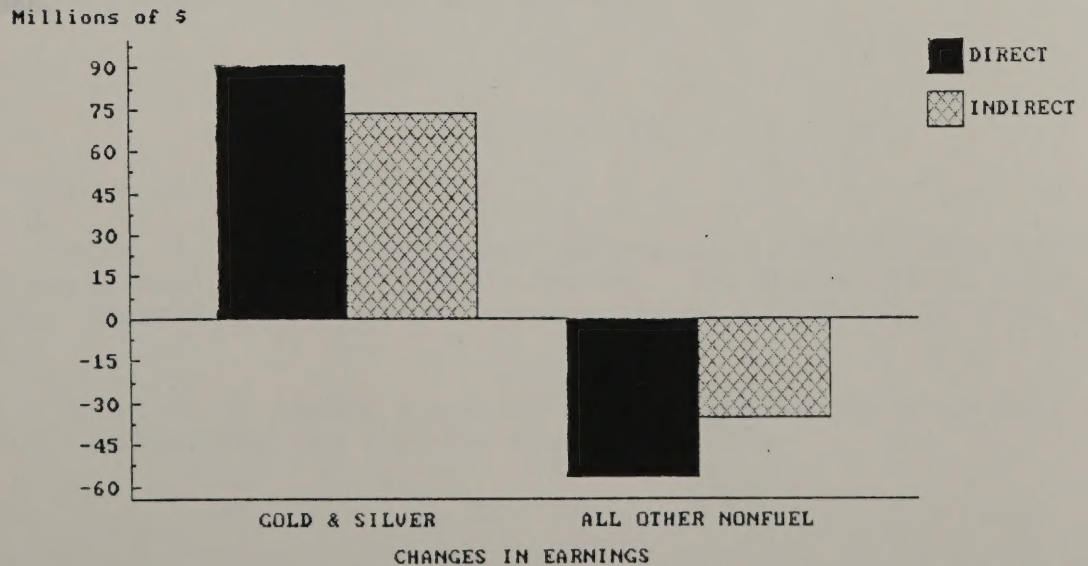
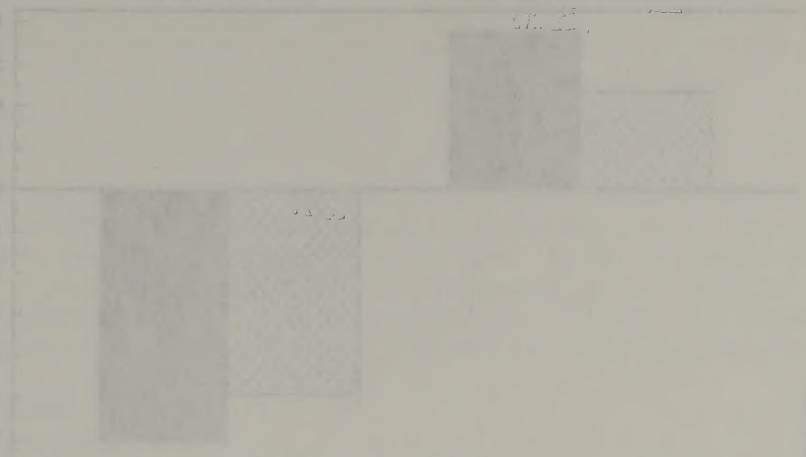
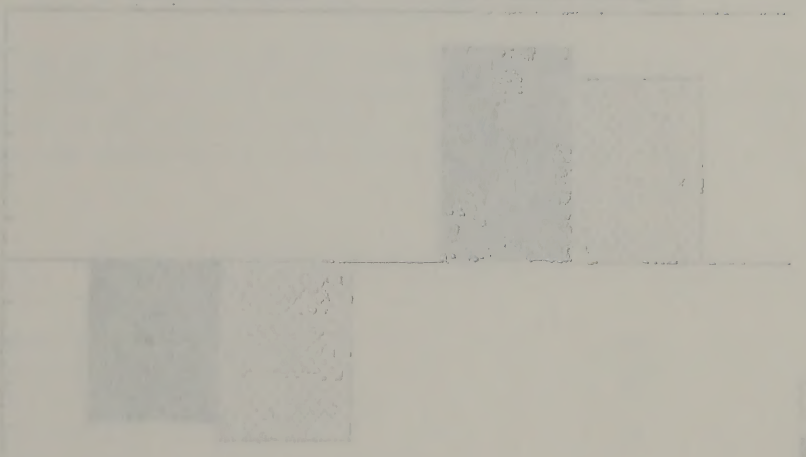


CHART 4b. CUMULATIVE CHANGES IN IMPACTS FOR EARNINGS IN NEVADA DUE TO CHANGES IN NONFUEL MINERAL MINING BETWEEN 1981 AND 1986







The indirect impacts and consequently the total employment and earnings multipliers for gold and silver are slightly larger than those of the other nonfuel minerals. For example, each 100 new jobs in gold and silver mining creates up to 110 other jobs in the Nevada economy, for a total of 210 jobs and a multiplier of 2.1. For a similar number of new jobs in other nonfuel minerals, up to 80 other jobs are created. As for earnings, $1.00 earned in gold and silver mining creates $.80 in indirect earnings, while a similar dollar earned in the other mineral industries creates $.60 in indirect earnings.

It's difficult to completely explain the differences in the size of these multipliers. The input-output table and the Census of Mineral Industries, however, show that gold and silver mining is less labor intensive and more dependent on outside suppliers than other nonfuel mineral mining. This implies higher indirect impacts for gold and silver production. Furthermore, the earnings-per-employee ratio in Nevada's gold and silver industry is generally higher than that of the other nonfuel mineral industries. More earnings circulating through the economy will create larger spending impacts. Continued strength in gold and silver mining, with its high wages and multiplier effects, should benefit Nevada as well as the counties where the mining occurs.

TAXES PAID BY THE NONFUEL MINERAL INDUSTRY

Since there are no corporate or personal income taxes in Nevada, the only important taxes affecting the nonfuel mineral industries are the net proceeds of mines tax, the property tax, and the sales and use taxes on purchases of equipment and supplies.

The net proceeds of mines tax is a local tax on net earnings from the sale of the product of mining operations levied at the local property tax rate. These revenues, along with revenues from the property tax, go entirely to the counties. Table 5 shows estimates of the total taxes paid by the State nonfuel mineral industries for calendar years 1981 through 1986.

Table 5. - Estimated State and Local Taxes Paid by the Nonfuel Mineral Industries in Nevada (Millions of $)

	1981	1982	1983	1984	1985	1986
Net proceeds of mines	1.9	1.8	4.2	3.2	3.5	6.1
Property taxes	1.2	1.6	3.1	3.4	3.5	3.8
Sales and use taxes	8.3	11.1	21.5	23.8	24.2	26.2
Total	11.4	14.5	28.8	30.4	31.2	36.1

Source: Estimated from data provided by the Nevada Tax Commission.

Taxes payments increased considerably after 1982, due in large part to the strength in gold and silver, with 1986 payments over three times the amount in 1981. The Nevada Bureau of Mines and Geology, in a 1982 study, showed that tax revenues from the mining net proceeds and property tax account for a substantial portion of total property revenue received by the counties analyzed in this report. These portions (17 to 84 percent of property revenue) show the dependence of local governments on mining.

Table 6. - Mining Proceeds Plus Property Tax as a Percent of Total Property Revenues, Fiscal Year 1981-1982[6]

County	Percent
Elko	17
Eureka	76
Lander	84
Nye	35
White Pine	48

Mining taxes received considerable attention in early 1987 when a bill aimed at balancing the State budget was introduced in the Nevada legislature to impose a fee of $16.50 (later amended to $11.00) per troy ounce on every ounce of gold extracted in Nevada. After several other proposed companion measures, the legislators and the Nevada Mining Association reached the following agreement:[7]

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[6]Dobra, J. L., and G. Atkinson. An Analysis of the Economic Impact of the Mining Industry on Nevada's Economy. The Nevada Mineral Industry 1982. Nevada Bureau of Mines & Geology Special Publication MI-1982, 48 pp.

[7]Epler, Bill. Nevada Mining Tax Fuss Settled-But the Price Was High. Southwestern Pay Dirt for July 1987. p. 22A.

1. Nevada gold producers agreed to pay the State a $10.0 million "accelerated" payment on their anticipated net proceeds of mines tax in 1987, and a $10.5 million "prepayment" in 1989 on a new tax schedule outlined under a proposed constitutional amendment,

2. the mining industry as a whole volunteered to prepay its estimated net proceeds tax for the 1987 calendar year, and

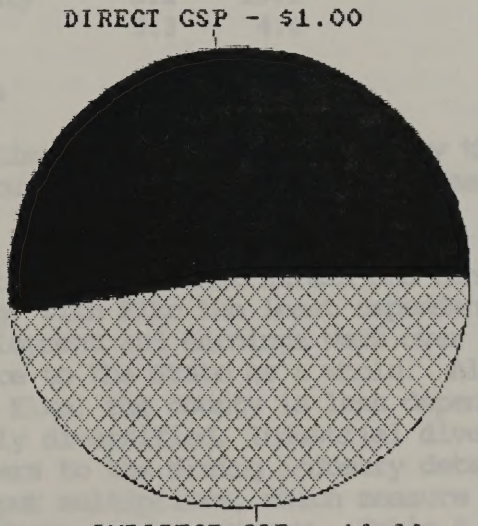
3. a bill signed by the Governor would amend the State constitution, after legislative and voter approval, to increase the net proceeds tax on mines, and for the first time, allow revenue from this tax to flow to the State.

If the original severance tax on gold or some of the companion measures had been adopted, several mining operations threatened to shut down, adversely affecting some of the rural economies in Nevada. Such shutdowns, as will be seen, would have had a multiplier effect on employment and earnings throughout the counties and the State.

IMPACT OF NONFUEL MINERAL MINING ON GROSS STATE PRODUCT

The nonfuel mineral industry, as part of the Nevada economy, contributes directly and indirectly to total gross state product, i.e., the market value of new goods and services produced by labor and property supplied by the residents of Nevada. While gross state product for nonfuel minerals will fluctuate because of commodity prices and business cycles, it is estimated that each $1.00 of gross state product from the nonfuel mineral industry adds a total of $.90 indirectly from other Nevada industries which sell to the mining industries, its employees and proprietors, and all other suppliers and employees indirectly affected.

CHART 5. TOTAL IMPACT ON NEVADA GROSS STATE PRODUCT FROM $1.00 OF GROSS STATE PRODUCT BY NONFUEL MINERAL MINING



TOTAL CONTRIBUTION TO GROSS STATE PRODUCT - $1.90

IMPACTS OF NONFUEL MINERALS ON THE RURAL COUNTIES OF NEVADA

If other industries in Nevada overshadow mining at the state level, just the opposite is often true at the county level. In some rural areas mining is the key industry, often determining the economic structures of counties and their towns. Table 7 shows the dependence of employment and earnings on nonfuel minerals for some of the largest mining counties in Nevada.

Table 7. - Direct Nonfuel Mining Employment and Earnings as a Percent of Total Employment and Earnings for Selected Counties and Nevada

Region	Employment 1981	Employment 1986	Earnings 1981	Earnings 1986
Eureka County	45.0	61.5	65.7	78.7
Lander County	37.5	35.6	53.9	61.0
Nye County	15.3	8.2	18.2	10.1
White Pine County	8.2	13.1	11.7	27.2
Elko County	5.3	4.4	9.0	8.5
State of Nevada	1.3	1.0	2.1	1.8

Source: Estimated from data provided by the Nevada Employment Security Department and the Bureau of Economic Analysis.

A glance at Table 7 shows that Eureka and Lander counties are the most dependent on mining, with Elko the least dependent. Yet in 1986 Elko's nonfuel mining employment and earnings were over four times more important to it than they were to the State as a whole. Although mining affects many businesses in Elko, the county is less dependent on mining because it is more industrially diversified. Industrial diversification and the location of suppliers to the mining industry determine the size of regional input-output multipliers, which measure the total impacts of the nonfuel mineral industry on an economy. Table 8 lists such multipliers for the counties shown above, with the order of the regions reversed.

Table 8. - Employment and Earnings Multipliers for All Nonfuel Mineral Industries in Nevada and Selected Counties

Region	Employment	Earnings
State of Nevada	2.0	1.8
Elko County	1.6	1.4
White Pine County	1.6	1.4
Nye County	1.3	1.2
Lander County	1.3	1.2
Eureka County	1.2	1.1

The Nevada multipliers are larger than those of the counties because multipliers measure the "ripple" effect on employment and earnings for other businesses due to the presence of mining in the region. The more industries in a region from which mining companies and its employees and proprietors purchase goods and services, the more businesses they impact. Since Nevada is a larger and more diversified region than each of the counties, the "ripple" effect travels further than it would in Elko or Eureka.

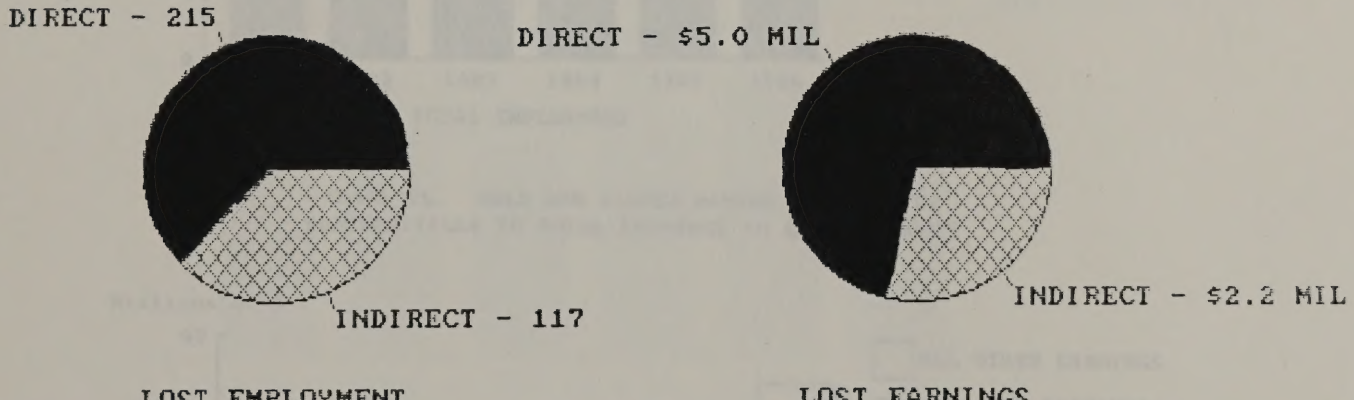
The companies and employees in the counties with relatively low multipliers purchase many goods and services from outside the counties. But mining generates such large direct employment and earnings impacts, that some local economies would face catastrophic consequences if mining shut down. For counties with larger multipliers, their size determines the impacts. In Elko and White Pine counties, every 10 nonfuel mining jobs creates up to 6 jobs in other industries. Every $10.00 earned creates up to $4.00 in earnings for employees and proprietors in other industries in the counties.

Over the 1981-1986 period, these five counties gained or lost jobs and earnings depending on the types of nonfuel minerals produced. The following brief analyses will show how changes in the minerals mined affected each county.

ELKO COUNTY

Nonfuel mineral employment in Elko, an industrially well-diversified county, shifted for two major mining industries between 1981 and 1986. Employment in gold and silver mining jumped 77%, from an estimated 317 jobs in 1981 to 562 at the end of 1986. But employment in barite mining declined 94%, with about 215 jobs lost. These changes netted a gain of only 30 jobs. Production of barite, which is used in drilling muds, dropped sharply because of the slump in oil and gas well drilling. Chart 6 shows the total impacts on Elko county resulting from the decline in barite production over the five-year period. If barite mining should recover, it is estimated 10 new jobs could create up to 6 jobs in other industries.

CHART 6. TOTAL IMPACTS ON EMPLOYMENT AND EARNINGS FROM THE DECLINE IN BARITE MINING FROM 1981 TO 1986 IN ELKO COUNTY



EUREKA COUNTY

Not only is the nonfuel mineral industry the largest employer in Eureka, it is dominated almost entirely by gold and silver mining. Total county employment grew about 57% during the period, mostly because of some 441 new high-paying jobs in gold and silver mining. Charts 7a and 7b show the impact of mining to the county economy over this period. Because Eureka is so dependent on mining, any setbacks in gold and silver will clearly have adverse effects on the local economy.

CHART 7a. EMPLOYMENT IN EUREKA COUNTY IS DEPENDENT ON GOLD AND SILVER MINING

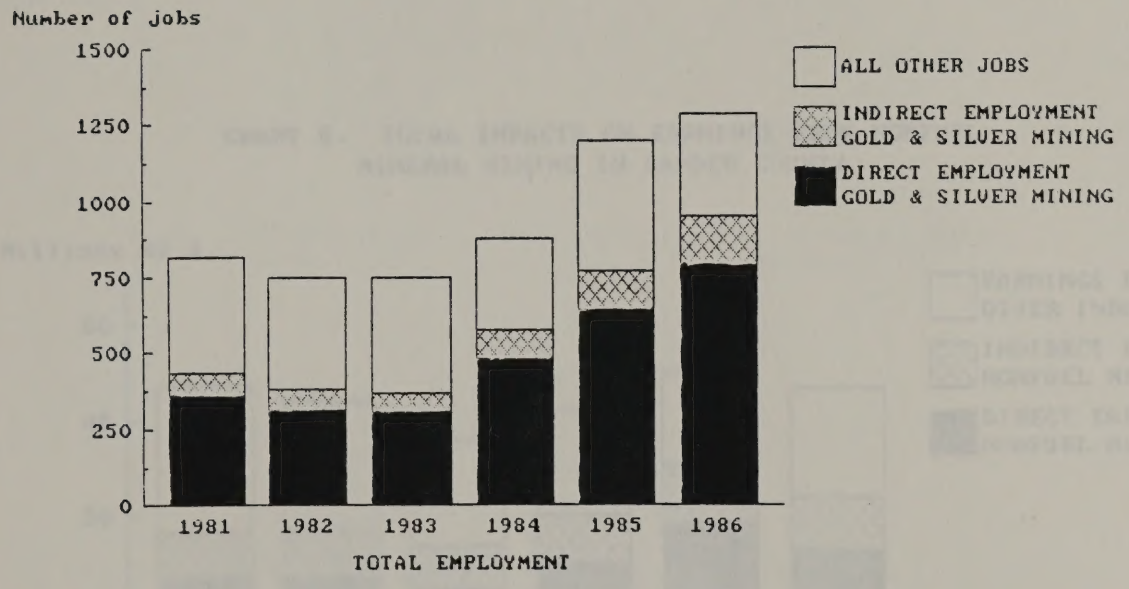
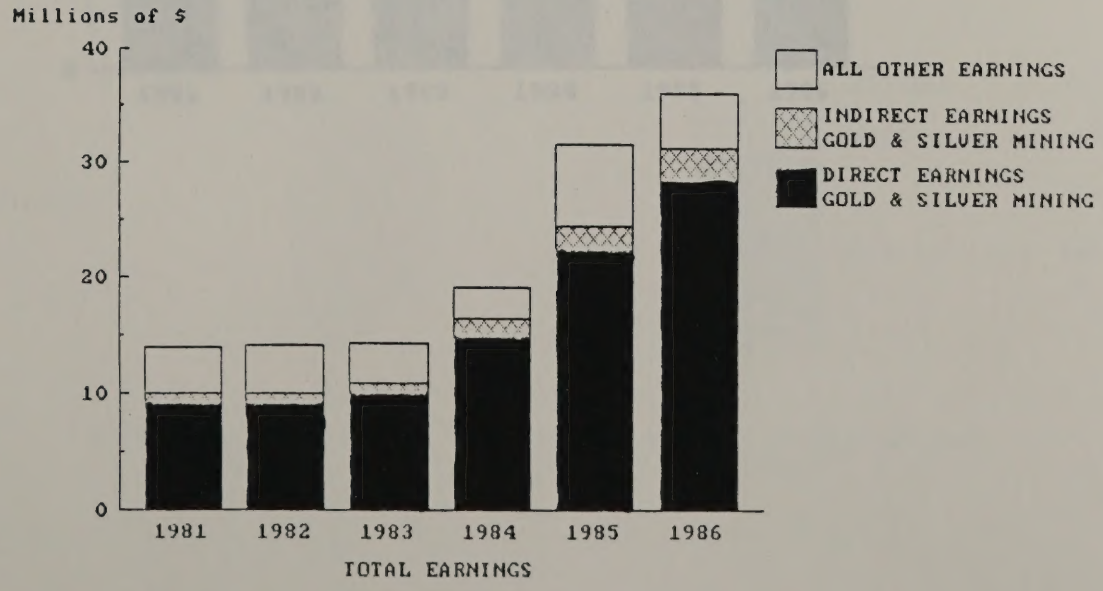


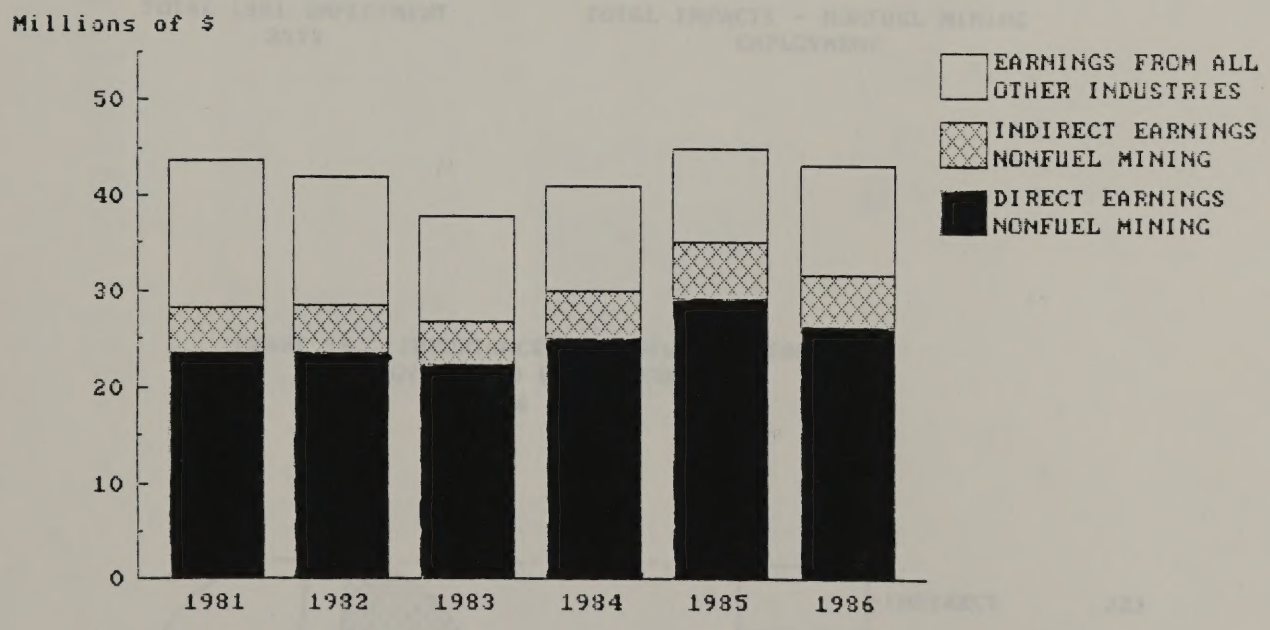
CHART 7b. GOLD AND SILVER MINING CONTRIBUTES SUBSTANTIALLY TO TOTAL EARNINGS IN EUREKA COUNTY



LANDER COUNTY

Like Eureka, Lander is also not diversified and relies heavily on mining. The importance of mining is shown in Charts 8 and 9a and b. For 1981 and 1986 almost 50% of the work force was directly and indirectly affected by nonfuel mining. More importantly, Chart 8 shows earnings directly and indirectly related to nonfuel minerals accounted for substantial portions of total county earnings, ranging from 65% in 1981 to 78% in 1985. Employment in Lander declined for most industries, including mining, during the 1981-1986 period, because employment increases in gold and silver were unable to offset losses from a slumping barite industry and the shutdown of copper mining.

CHART 8. TOTAL IMPACTS ON EARNINGS FROM NONFUEL MINERAL MINING IN LANDER COUNTY



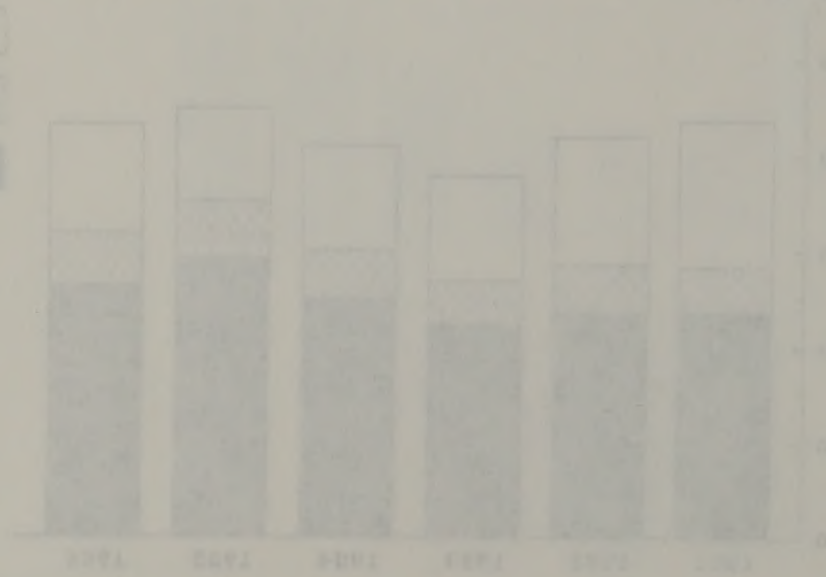
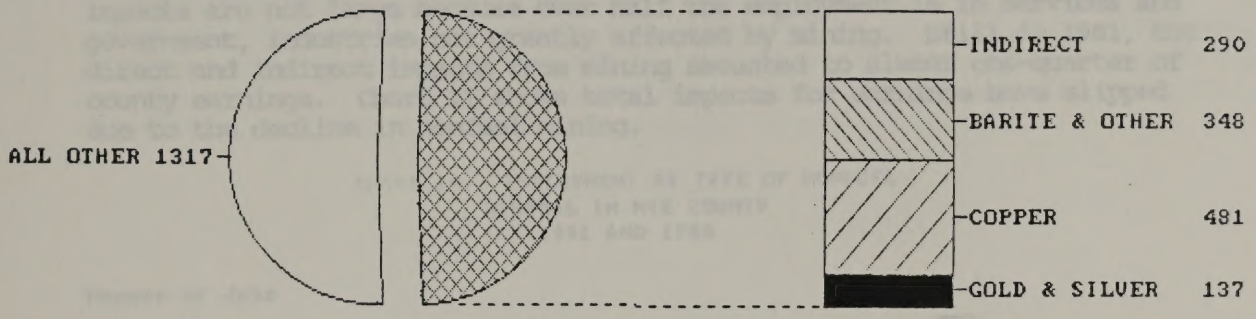


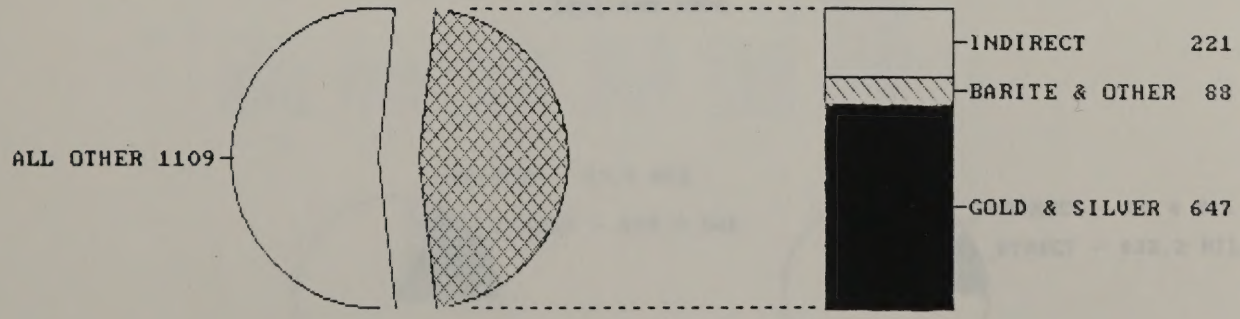
CHART 9a. IMPORTANCE OF NONFUEL MINERAL EMPLOYMENT TO LANDER COUNTY 1981



TOTAL 1981 EMPLOYMENT 2573

TOTAL IMPACTS - NONFUEL MINING EMPLOYMENT

CHART 9b. IMPORTANCE OF NONFUEL MINERAL EMPLOYMENT TO LANDER COUNTY 1986



TOTAL 1986 EMPLOYMENT 2065

TOTAL IMPACTS - NONFUEL MINING EMPLOYMENT

NYE COUNTY

As with other regions of Nevada, gold and silver employment increased dramatically while other mining employment declined. In 1981 gold and silver jobs in Nye stood at about 386, or approximately 28% of total nonfuel mining employment. In 1986 gold and silver climbed to 680 jobs, or 76% of the total. These new jobs in gold and silver were not enough to offset job losses in other mining, and 1986 total nonfuel mining employment averaged 895, down 35% from the average 1,384 in 1981. Nonfuel mining currently accounts for about 8% of county employment, and total impacts are not large because over half the employment is in services and government, industries not greatly affected by mining. Still in 1981, the direct and indirect impacts from mining amounted to almost one-quarter of county earnings. Chart 11 shows total impacts for earnings have slipped due to the decline in nonfuel mining.

CHART 10. EMPLOYMENT BY TYPE OF NONFUEL MINERAL IN NYE COUNTY 1981 AND 1986

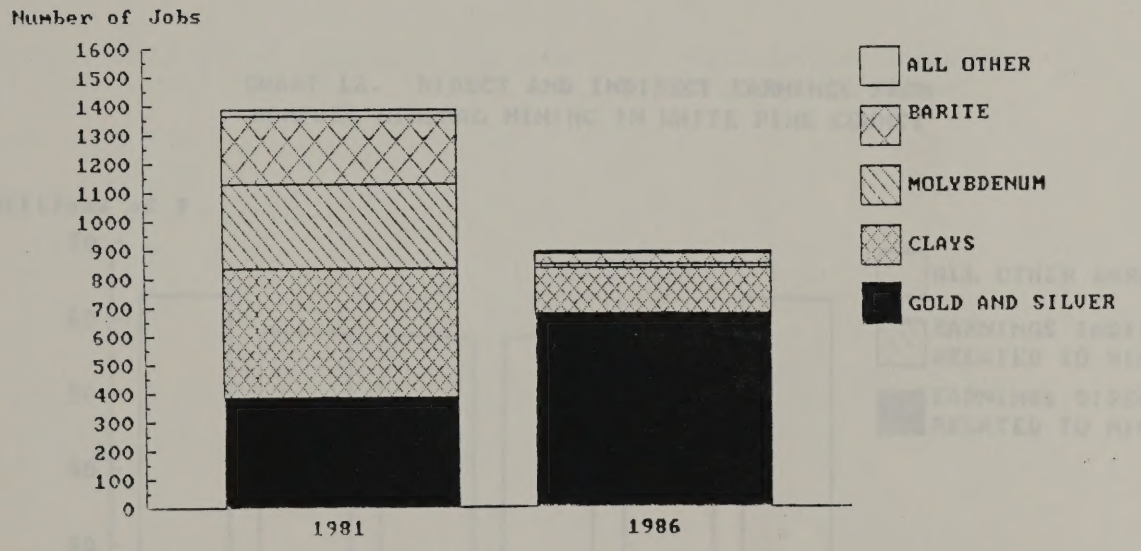
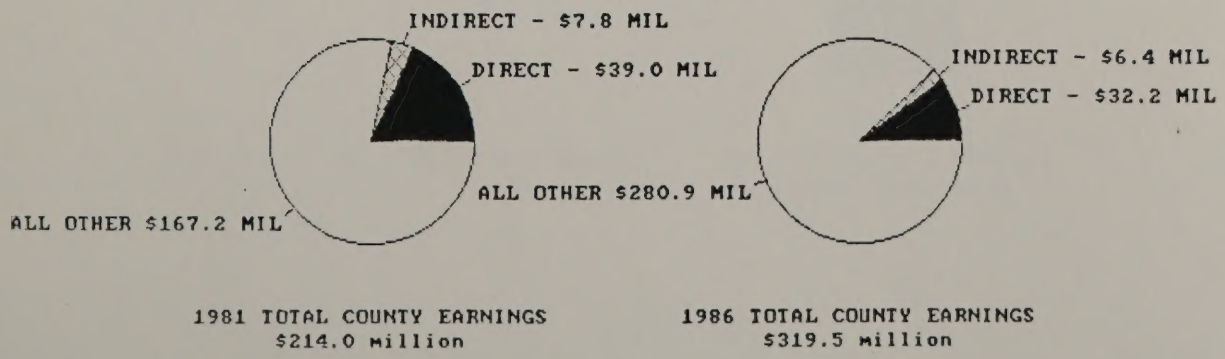
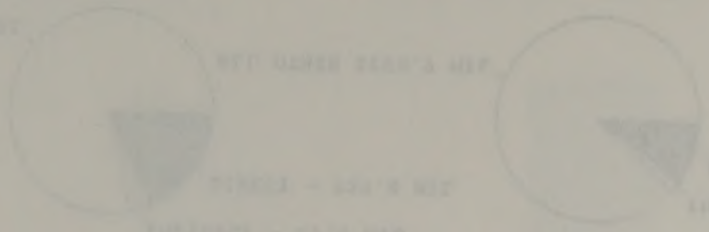


CHART 11. VALUE OF DIRECT AND INDIRECT EARNINGS CONTRIBUTED BY NONFUEL MINING IN NYE COUNTY 1981 AND 1986





WHITE PINE COUNTY

Employment in most industries in White Pine declined during the 1981-1986 period. Total employment, which stood at 4,255 in 1981, dropped 14% to 3,652 in 1986. About half this decline can be attributed to the direct loss of some 310 jobs during the period from the shutdown of the Kennecott primary copper smelter at McGill. It is estimated up to 280 other county jobs were indirectly lost. After a sharp decline in 1982, nonfuel mining employment, dominated by gold and silver, picked up and stood at 480 jobs at the end of 1986, compared to 350 for 1981. For 1986, gold and silver accounted for 96% of nonfuel mining employment, compared to 87% in 1981. Services and government, which are not greatly affected by mining, account for about 45% of total county employment.

CHART 12. DIRECT AND INDIRECT EARNINGS FROM NONFUEL MINERAL MINING IN WHITE PINE COUNTY

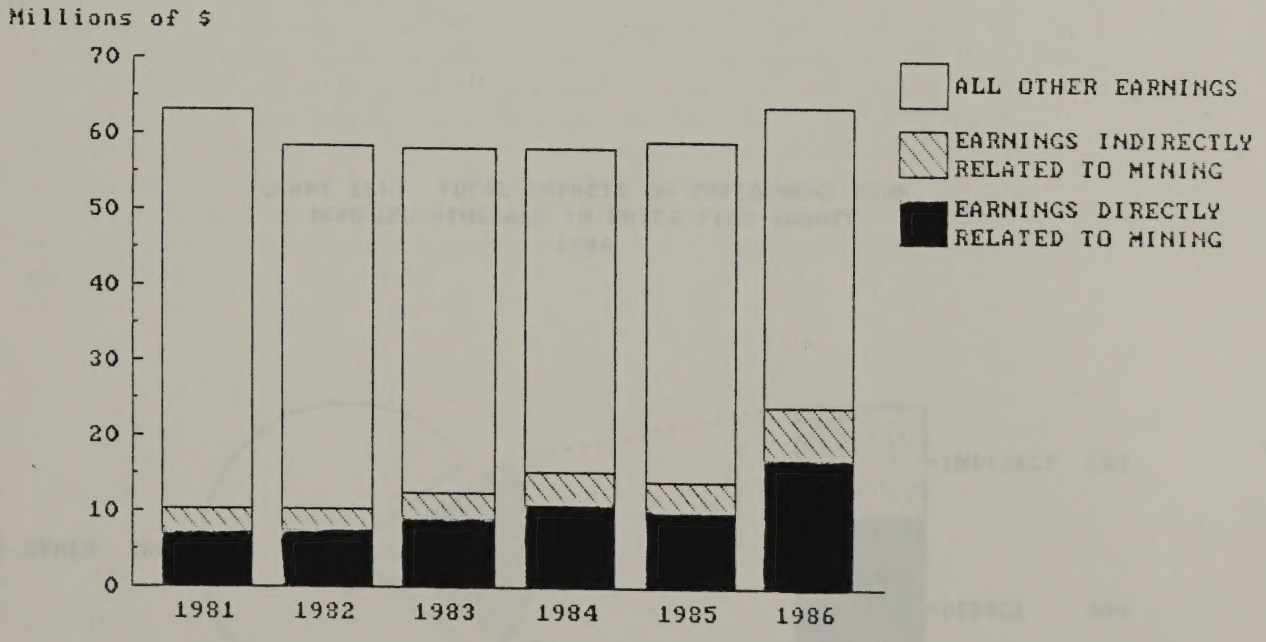
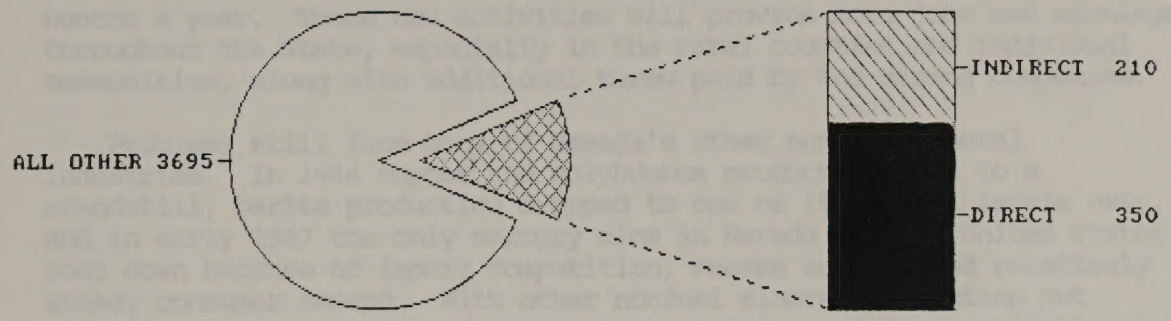


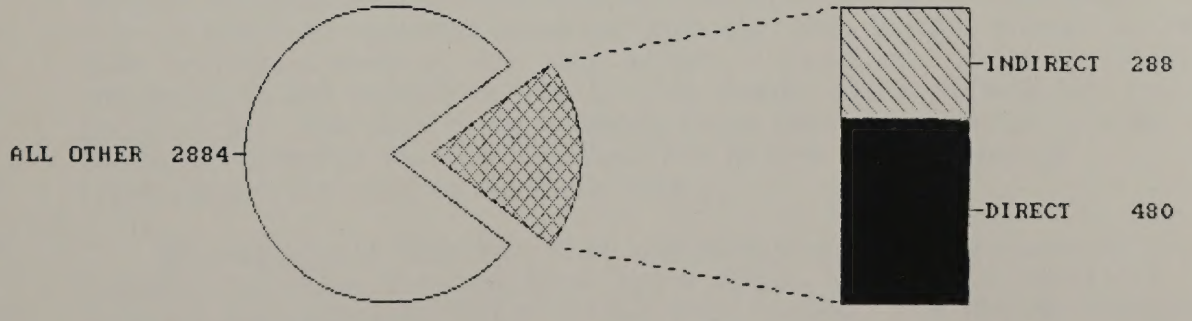
CHART 13a. TOTAL IMPACTS ON EMPLOYMENT FROM NONFUEL MINERALS IN WHITE PINE COUNTY 1981



TOTAL COUNTY EMPLOYMENT FOR 1981
4255

TOTAL IMPACTS - NONFUEL MINING EMPLOYMENT

CHART 13b. TOTAL IMPACTS ON EMPLOYMENT FROM NONFUEL MINERALS IN WHITE PINE COUNTY 1986



TOTAL COUNTY EMPLOYMENT FOR 1986
3652

TOTAL IMPACTS - NONFUEL MINING EMPLOYMENT

CONCLUSION

Gold production in Nevada increased dramatically between 1981 and 1986 with production and exploration continuing to expand. Decisions to initiate production were announced for twelve new Nevada gold mine projects in 1987 and these projects are moving toward start-ups. Of the new gold mines, four will be substantial producers of at least 50,000 ounces a year. These new activities will provide more jobs and earnings throughout the State, especially in the rural counties and individual communities, along with additional taxes paid by the mining companies.

Problems still face many of Nevada's other nonfuel mineral industries. In 1986 copper and molybdenum production came to a standstill, barite production dropped to one of its lowest levels ever, and in early 1987 the only mercury mine in Nevada and the United States shut down because of import competition, excess supply, and relatively steady consumer demand. With other nonfuel mineral production cut severely or stopped altogether, employment and earnings, especially at the county level, have been adversely affected. Of the five counties examined in this report, only two, Eureka and White Pine, saw increases in overall mining employment.

Producing nonfuel minerals now means adjusting to competitive world markets, uncertain demand, and increasing regulatory costs. Faced with such an environment, nonfuel mineral producers are cutting costs and increasing productivity by reducing labor and adopting new and cheaper technology to produce mineral products. Much of the success enjoyed by Nevada's gold and silver industry is due to the "heap leaching" technology, and while employment has increased considerably, output and consequently productivity have increased even more. A more capital-intensive nonfuel mineral industry will not necessarily result in significant increases in mining jobs, and direct employment increases may be lower than in the past.

APPENDIX A. - METHODOLOGY

Any developed economy, whether national or regional, is characterized by a high degree of interdependence among producing sectors of the economy. Each sector not only produces goods or services but is also a consumer itself, purchasing other goods and services for use in its production process. An input-output matrix quantifies these relationships by specifying the output of each sector and the labor, material, and service inputs needed to produce that output. Once an economy is so described, production changes in any sector can be traced through the matrix to determine the impact of such changes on all other economic sectors.

The construction and use of input-output models require some simplifying assumptions which may affect the analysis of results. A key premise is that inputs are used by industries in fixed proportions. This assumption of linearity does not allow for factor substitution or economies of scale. Further, all inputs are assumed to be available as expansion occurs. Though these restrictions may not be met in a rapidly changing economy, in most cases changes in production technology are slow enough that analysis using input-output techniques provides reasonable results.

The input-output model used in this report is the IMPLAN model developed by the U. S. Forest Service. IMPLAN uses specific regional or local economic data in conjunction with the production technology represented in the national input-output table prepared by the Bureau of Economic Analysis, U. S. Department of Commerce, to generate a regional input-output matrix for the area under study. This regional model provides estimates of output, income and employment for all industrial sectors in the region (up to 466 sectors); purchases of inputs by each producing sector from other sectors both within and outside the region; and purchases of final goods and services by individuals, businesses, and government, both within and outside the region.

Once the regional input-output table is created, it can be manipulated mathematically to generate output, income and employment multipliers. By applying these multipliers to an initial change in one or more industrial sectors, the total economic impact on the region can be estimated as the effects of the initial change ripple through the rest of the economy. The ability to estimate these total impacts for a large number of economic sectors comprises the unique contribution of input-output analysis to economic theory.

Preparation of this report on the contribution of the mineral industry to Nevada involved three major steps. First, the regional industry data provided by the IMPLAN model needed to be checked against similar data from other sources for accuracy and consistency, thus ensuring the calculation of reasonable multipliers. Data corresponding to the IMPLAN data is available from the economic censuses and other reports published by the Census bureau. Next, mineral industry data for Nevada from 1981 to 1986 were collected and analyzed, resulting in estimates of recent direct impacts of minerals to the State economy. The multipliers were then applied to the estimated direct impacts to determine the estimated total impacts.

Data for the years 1981 to 1986 came from a variety of sources, including Bureau of Mines commodity specialists, the Nevada Employment Security Department, the Nevada Department of Taxation, the Bureau of Economic Analysis, and the Bureau of Census. These data were often collected at a higher level of aggregation than desired for this report or were withheld to maintain individual company confidentially. Thus, many values had to be estimated.

The Bureau of Economic Analysis provided total mining industry employment and earnings data for 1981 to 1986 which are consistent with similar IMPLAN data. Allocation of these employment and earnings totals to specific kinds of mining was based primarily on employment detail provided by the Nevada Employment Security Department. Total gross state product (GSP) for Nevada was estimated by developing U. S. ratios of gross national product (GNP) by industry to compensation by industry and applying these ratios to earnings by industry for Nevada obtained from the Bureau of Economic Analysis. GSP for the nonfuel minerals was estimated separately, and certain components such as corporate profits before taxes, capital consumption allowances, and net interest were estimated from relations developed from financial data in company reports for several mining and metals companies. The production indexes were estimated from Bureau of Mines production data and weighted by estimates of compensation and employment attributed to the mining industries producing the minerals. For this procedure the mining industries were classified by the three-digit U. S. Standard Industrial Classification.

The latest U. S. input-output table currently available is based on 1977 economic data and depicts current account expenditures. It does not measure investment in plant and equipment which results in technological improvements in mineral production. The input-output production functions in this report describe current purchases of goods and services from other industries which are needed in the production process. Furthermore, multipliers derived from these production functions include direct and indirect purchases of goods and services needed by employees of the industries affected. While technological changes and shifts in consumer preferences may alter purchase patterns for some goods and services over time, multipliers generated from the 1977 input-output table are still assumed to be reasonable reflections of each mining industry's purchases and importance to other industries in the economy.

APPENDIX B. - TABLES FOR NEVADA AND THE COUNTIES OF ELKO, EUREKA, LANDER, NYE, AND WHITE PINE

This appendix contains several tables for Nevada and the five counties analyzed. Table 1 shows nonfuel mineral production for Nevada compiled by the Bureau of Mines, while the remaining tables show employment and earnings by major industry and the total economic impacts.

The Bureau of Economic Analysis (BEA), U. S. Department of Commerce, provided the tables showing full-time and part-time employment and earnings by major industry. These tables are shown in a manner consistent with BEA's presentation. For the State of Nevada, the only industry levels published for nonfuel mining are total metal mining and total nonmetallic minerals, except fuels. For the counties, only total mining (nonfuel plus fuel) is published.

For some years BEA withheld mining employment and earnings data. In Table 2, for instance, 1982 total employment for metal mining was withheld. Since BEA only withheld such industry data for either a single year or two years, estimates could easily be interpolated or extrapolated. Employment and earnings for a specific industry, such as gold and silver mining, were estimated from information provided by the Nevada Employment Security Department.

The tables showing total impacts are based on calculations from the input-output models developed from the U. S. Forest Service's regional economic impact model, IMPLAN. The indirect and total impacts are, for the most part, estimates and should be interpreted with caution.

Table 1. - Nonfuel Mineral Production in Nevada 1/
(Millions of $)

	1981	1982	1983	1984	1985	1986
Barite (thousand s.t.)	2,482	1,575	663	615	590	184
	$79.7	$52.7	$21.7	$14.9	$10.9	$3.0
Clays 2/ (thousand s.t.)	73	103	58	20	80	10
	$2.9	$2.6	$2.3	$1.2	$3.8	$0.6
Gem stones	NA	NA	NA	NA	NA	NA
	$1.0	$1.2	$1.2	$1.3	$1.3	$0.2
Gold (recoverable content of ores, etc., thousand troy ounces)	524.8	757.1	960.7	1,020.5	1,276.1	2,098.9
	$241.2	$284.6	$407.3	$368.1	$405.4	$772.9
Gypsum (thousand s.t.)	778	656	998	1,192	1,207	1,236
	$6.9	$4.5	$7.9	$8.9	$8.9	$8.2
Iron ore (thousand long tons)	99	77	W	W	W	W
	$1.5	$1.1	W	W	W	W
Lead (recoverable content of ores, etc., metric tons)	W	W	14	W	L	-
	W	W	W	W	L	-
Mercury (76-lb flasks)	27,819	25,760	25,070	19,048	16,530	W
	$11.5	W	W	W	W	W
Sand and gravel						
Construction (thousand s.t.)	7,065	6,027	7,500	8,202	9,500	12,197
	$15.8	$11.7	$16.2	$20.5	$24.9	$35.7
Industrial (thousand s.t.)	W	W	W	489	479	518
	W	W	W	W	W	W
Silver (recoverable content of ores, etc., thousand troy ounces)	3,039	3,142	5,179	6,477	4,947	6,409
	$32.0	$25.0	$59.3	$52.7	$30.4	$35.1
Stone, crushed (thousand s.t.)	1,343	1,300	1,269	1,100	1,334	1,500
	$5.7	$4.5	$5.4	$4.7	$6.2	$7.0
Zinc (recoverable content of ores, etc.)	W	-	-	-	-	-
	W					
All other nonfuel minerals (value only) 3/	$108.5	$144.4	$111.2	$151.8	$139.2	$114.6
Total	$506.7	$532.5	$632.5	$624.1	$631.0	$977.3
Total excl gold and silver	$233.5	$222.9	$165.9	$203.3	$195.1	$169.3

Source: Bureau of Mines.

NA Not Available. s.t. Short tons. W Withheld to avoid disclosing company proprietary data; value included with value for all other nonfuel minerals.
L Less than 1/2 unit.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Excludes certain clays; value included with the value for all other nonfuel minerals.

3/ Combined value of cement (portland), clays (fuller's earth and kaolin), copper, diatomite, fluorspar, iron ore (usable), lime, lithium compounds, magnesite, molybdenum, perlite, salt, and values indicated by symbol W.

Table 2. - Full-time and part-time employment by major industry for Nevada 1/

	1981	1982	1983	1984	1985	1986
Total	494,481	487,833	493,953	522,342	546,318	574,180
Farm	6,058	5,677	5,551	5,275	5,035	5,302
Nonfarm 2/						
Agric serv, forestry, fisheries, & other3/	2,594	2,647	2,928	3,285	3,574	3,854
Mining	8,315	7,196	6,426	7,137	6,580	6,864
Coal mining	0	0	0	D	D	D
Oil and gas extraction	877	D	527	D	D	D
Metal mining	5,206	e4,400	4,351	4,993	4,445	5,182
Gold and silver e/	2,568	2,246	2,597	3,659	3,627	4,524
Nonmetallic minerals, except fuels	2,232	e2,000	1,548	1,525	1,430	1,171
Chem & fertilizers, incl barite e/	1,009	889	526	487	526	266
Construction	30,222	25,232	25,088	28,113	30,246	34,471
Manufacturing	21,059	19,811	20,219	22,218	23,190	23,567
Transportation and public utilities	26,289	26,097	25,965	26,831	27,290	28,773
Wholesale trade	14,767	14,388	14,381	15,471	16,526	17,448
Retail trade	79,386	76,346	76,354	81,142	84,974	87,980
Finance, insurance, and real estate	32,424	32,364	33,401	36,426	39,344	41,616
Services	201,707	204,943	209,626	222,707	235,382	248,855
Hotels and other lodging places	65,245	64,472	67,247	81,635	99,881	104,331
Government and government enterprises	71,660	73,132	74,014	73,737	74,177	75,450
Federal, civilian	9,683	9,872	9,857	10,152	10,555	10,912
Military	12,860	13,538	14,636	13,699	13,083	13,134
State and local	49,117	49,722	49,521	49,886	50,539	51,404

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Includes wage and salary employees plus proprietors.

2/ Excludes limited partners.

3/ Other -- Number of jobs held by U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

e Estimated by the author from data provided by the Nevada Employment Security Department. Actual figures either not available or withheld by the Bureau of Economic Analysis.

Table 3. - Full-time and part-time employment by major industry for Elko County, Nevada 1/

	1981	1982	1983	1984	1985 e/	1986 e/
Total	11,291	11,342	11,650	12,658	13,145	13,265
Farm	798	774	729	703	NA	NA
Nonfarm 2/						
Agric serv, forestry, fisheries, & other3/	63	75	80	86	NA	NA
Mining	748	826	687	798	809	742
Nonfuel mining e/	598	611	475	519	560	580
Gold and silver e/	317	379	408	462	487	562
Chem & fertilizers, incl barite e/	228	214	55	40	30	13
Construction	755	625	525	671	NA	NA
Manufacturing	227	203	210	192	NA	NA
Transportation and public utilities	787	748	748	776	NA	NA
Wholesale trade	250	248	280	309	NA	NA
Retail trade	1,607	1,552	1,519	1,606	NA	NA
Finance, insurance, and real estate	475	458	493	540	NA	NA
Services	3,683	3,982	4,465	4,935	NA	NA
Government and government enterprises	1,898	1,851	1,914	2,042	NA	NA
Federal, civilian	331	308	312	380	NA	NA
Military	92	56	64	63	NA	NA
State and local	1,475	1,487	1,538	1,599	NA	NA

Source: Bureau of Economic Analysis. U. S. Department of Commerce

1/ Based on 1972 U.S. Standard Industrial Classification. Includes wage and salary employees plus proprietors.

2/ Excludes limited partners.

3/ Other -- Number of jobs held by U.S. residents working for international organizations in the U.S.

e Estimated by the author from data provided by the Nevada Employment Security Department.

NA Not available

Table 4. - Full-time and part-time employment by major industry for Eureka County, Nevada 1/

	1981	1982	1983	1984	1985 e/	1986 e/
Total	820	750	749	878	1200	1285
Farm	163	158	148	143	NA	NA
Nonfarm 2/						
Agric serv, forestry, fisheries, & other3/	L	L	L	L	NA	NA
Mining	394	e 349	e 312	485	671	798
Nonfuel mining e/	366	318	307	480	642	790
Gold and silver e/	346	307	299	470	619	787
Construction	D	D	D	L	NA	NA
Manufacturing	L	L	L	L	NA	NA
Transportation and public utilities	D	L	L	L	NA	NA
Wholesale trade	L	L	L	L	NA	NA
Retail trade	80	61	64	69	NA	NA
Finance, insurance, and real estate	L	D	L	L	NA	NA
Services	24	26	32	29	NA	NA
Government and government enterprises	109	127	124	126	NA	NA
Federal, civilian	L	L	L	L	NA	NA
Military	L	L	L	L	NA	NA
State and local	100	114	113	114	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Includes wage and salary employees plus proprietors.

2/ Excludes limited partners.

3/ Other -- Number of jobs held by U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

L Less than 10 jobs.

e Estimated by the author from data provided by the Nevada Employment Security Department.

NA Not available

Table 5. - Full-time and part-time employment by major industry for Lander County, Nevada 1/

	1981	1982	1983	1984	e/ 1985	e/ 1986
Total	2,573	2,316	2,048	2,128	2,154	2,065
Farm	137	132	123	119	NA	NA
Nonfarm 2/						
Agric serv, forestry, fisheries, & other3/	13	D	D	D	NA	NA
Mining	1,164	1,035	813	843	859	745
Nonfuel Mining e/	966	880	748	809	840	735
Gold and Silver e/	137	123	168	643	657	647
Copper e/	481	444	403	0	0	0
Chem & fertilizers, incl barite e/	335	304	172	163	179	84
Construction	D	15	15	21	NA	NA
Manufacturing	D	D	D	D	NA	NA
Transportation and Public Utilities	76	81	81	102	NA	NA
Wholesale Trade	D	43	D	18	NA	NA
Retail Trade	516	398	327	308	NA	NA
Finance, insurance, and real estate	38	40	38	41	NA	NA
Services	155	162	252	280	NA	NA
Government and government enterprises	407	392	362	367	NA	NA
Federal, civilian	117	93	80	79	NA	NA
Military	13	14	14	13	NA	NA
State and local	277	285	268	275	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Includes wage and salary employees plus proprietors.

2/ Excludes limited partners.

3/ Other -- Number of jobs held by U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

e Estimated by the author from data provided by the Nevada Employment Security Department

NA Not available

Table 6. - Full-time and part-time employment by major industry for Nye County, Nevada 1/

	1981	1982	1983	1984	e/ 1985	e/ 1986
Total	9,030	9,638	9,571	10,155	10,842	10,963
Farm	185	178	166	162	NA	NA
Nonfarm 2/						
Agric serv, forestry, fisheries, & other3/	D	D	D	D	NA	NA
Mining	1,554	1,452	1,138	1,236	874	1,003
Nonfuel Mining e/	1,384	1,348	1,053	1,105	726	895
Gold and Silver	386	350	338	416	408	680
Ferroalloy ores, incl molybdenum e/	291	480	335	321	31	16
Clays e/	452	316	248	242	166	158
Chem & fertilizers, incl barite e/	238	200	130	123	119	34
Construction	431	221	176	161	NA	NA
Manufacturing	94	94	81	86	NA	NA
Transportation and public utilities	158	D	D	D	NA	NA
Wholesale trade	D	41	24	21	NA	NA
Retail trade	625	639	610	647	NA	NA
Finance, insurance, and real estate	D	D	D	351	NA	NA
Services	4,683	5,714	6,094	6,421	NA	NA
Government and government enterprises	778	790	817	897	NA	NA
Federal, civilian	127	136	142	132	NA	NA
Military	98	63	67	68	NA	NA
State and local	553	591	608	697	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Includes wage and salary employees plus proprietors.

2/ Excludes limited partners.

3/ Other -- Number of jobs held by U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

e Estimated by the author from data provided by the Nevada Employment Security Department.

NA Not available

Table 7. - Full-time and part-time employment by major industry for White Pine County, Nevada 1/

	1981	1982	1983	1984	1985 e/	1986 e/
Total	4,255	3,695	3,527	3,569	3,523	3,652
Farm	183	175	163	159	NA	NA
Nonfarm 2/						
Agric serv, forestry, fisheries, & other3/	L	D	D	D	NA	NA
Mining	539	363	412	480	419	516
Nonfuel mining e/	350	271	277	341	288	480
Gold and Silver e/	306	243	268	310	267	461
Construction	237	167	182	223	NA	NA
Manufacturing	369	316	164	37	NA	NA
Transportation and public utilities	249	209	206	208	NA	NA
Wholesale trade	66	D	D	D	NA	NA
Retail trade	802	735	715	775	NA	NA
Finance, insurance, and real estate	168	146	137	123	NA	NA
Services	792	759	723	738	NA	NA
Government and government enterprises	842	753	748	717	NA	NA
Federal, civilian	152	147	142	140	NA	NA
Military	25	25	26	25	NA	NA
State and local	665	581	580	552	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Includes wage and salary employees plus proprietors.

2/ Excludes limited partners.

3/ Other -- Number of jobs held by U.S. residents working for international organization in the U.S.

D Not shown to avoid disclosure of confidential information.

L Less than 10 jobs.

e Estimated by the author from data provided by the Nevada Employment Security Department.

NA Not available

Table 8. - Earnings by major industry for Nevada 1/
(Millions of $)

	1981	1982	1983	1984	1985	1986
Total	8,123.7	8,366.2	8,836.1	9,601.3	10,378.2	11,227.5
Farm	49.8	40.7	29.1	44.0	32.2	40.4
Nonfarm						
Agric serv, forestry, fisheries, & other2/	30.2	28.9	38.9	37.8	41.0	45.8
Mining	230.4	210.2	199.1	228.2	234.0	229.0
Coal mining	0.0	0.0	0.0	D	D	D
Oil and gas extraction	36.3	D	22.9	D	D	D
Metal mining	139.2	e130.3	131.0	155.6	154.3	186.4
Nonmetallic minerals, except fuels	54.9	e52.8	45.2	46.4	43.6	11.1
Construction	830.0	704.6	698.4	754.5	815.7	944.6
Manufacturing	418.4	416.5	436.0	497.9	530.4	554.1
Transportation and public utilities	626.5	669.3	714.2	736.8	754.3	814.6
Wholesale trade	294.7	303.0	310.5	347.3	391.3	422.3
Retail trade	897.8	897.9	941.3	1,024.0	1,109.1	1,186.5
Finance, insurance, and real estate	348.4	337.3	387.3	428.5	477.7	548.4
Services	3,168.0	3,392.4	3,627.8	3,996.1	4,382.0	4,752.2
Hotels and other lodging places	1,025.4	1,044.1	1,137.9	1,408.6	1,758.2	1,875.8
Government and government enterprises	1,229.3	1,365.4	1,453.6	1,506.1	1,610.5	1,689.5
Federal, civilian	214.5	229.5	249.0	271.7	287.4	295.9
Military	170.4	198.4	224.9	217.3	214.8	216.7
State and local	844.4	937.6	979.7	1,017.1	1,108.3	1,176.8

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Components of earnings are wages and salaries, other labor income, and proprietors' income.

2/ Other -- wages and salaries of U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

e Estimated by the author. Actual figures withheld by the Bureau of Economic Analysis.

Table 9. - Earnings by major industry for Elko County, Nevada 1/
(Millions of $)

	1981	1982	1983	1984	1985 e/	1986 e/
Total	155.3	163.1	169.8	192.0	206.8	216.7
Farm	6.2	6.2	6.0	5.9	NA	NA
Nonfarm						
Agric serv, forestry, fisheries, & other2/	0.7	0.9	0.7	0.7	NA	NA
Mining	17.5	19.6	18.0	21.8	26.3	28.3
Nonfuel mining e/	14.0	14.5	12.4	14.2	17.1	18.4
Construction	15.1	12.3	10.1	12.9	NA	NA
Manufacturing	2.9	3.1	3.1	2.8	NA	NA
Transportation and public utilities	17.2	17.9	19.1	20.6	NA	NA
Wholesale trade	4.0	4.3	4.8	5.8	NA	NA
Retail trade	16.4	16.3	15.7	17.8	NA	NA
Finance, insurance, and real estate	2.4	1.6	3.0	3.3	NA	NA
Services	44.4	50.0	56.0	64.6	NA	NA
Government and government enterprises	28.5	30.8	33.1	35.8	NA	NA
Federal, civilian	6.4	6.2	6.7	8.5	NA	NA
Military	0.2	0.2	0.3	0.3	NA	NA
State and local	21.9	24.4	26.1	27.0	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Components of earnings are wages and salaries, other labor income, and proprietors' income.

2/ Other -- wages and salaries of U.S. residents working for international organizations in the U.S.

e Estimated by the author.

NA Not available

Table 10. - Earnings by major industry for Eureka County, Nevada 1/
(Millions of $)

	1981	1982	1983	1984	1985 e/	1986 e/
Total	14.0	14.1	14.4	19.2	31.6	36.1
Farm	0.9	1.2	0.7	1.1	NA	NA
Nonfarm						
Agric serv, forestry, fisheries, & other2/	L	L	L	L	NA	NA
Mining	9.9	e10.0	e10.2	15.1	23.3	28.7
Nonfuel mining e/	9.2	9.1	10.0	14.9	22.3	28.4
Construction	D	D	D	0.1	NA	NA
Manufacturing	L	L	L	L	NA	NA
Transportation and public utilities	D	0.2	0.1	0.1	NA	NA
Wholesale trade	0.1	0.1	0.1	0.1	NA	NA
Retail trade	0.6	0.4	0.4	0.4	NA	NA
Finance, insurance, and real estate	0.1	D	0.1	0.1	NA	NA
Services	0.3	0.3	0.4	0.4	NA	NA
Government and government enterprises	1.3	1.6	1.6	1.7	NA	NA
Federal, civilian	0.1	0.1	0.1	0.1	NA	NA
Military	L	L	L	L	NA	NA
State and local	1.2	1.5	1.5	1.5	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Components of earnings are wages and salaries, other labor income, and proprietors' income.

2/ Other -- wages and salaries of U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

L Less than $50,000.

e Estimated by the author.

NA Not available

Table 11. - Earnings by major industry for Lander County, Nevada 1/
(Millions of $)

	1981	1982	1983	1984	1985 e/	1986 e/
Total	43.6	41.9	37.7	40.9	44.9	43.3
Farm	1.7	1.6	1.7	1.6	NA	NA
Nonfarm						
Agric serv, forestry, fisheries, & other 2/	0.1	D	D	D	NA	NA
Mining	28.3	27.9	24.3	26.1	30.5	27.6
Nonfuel mining e/	23.5	23.7	22.3	25.0	29.2	26.4
Construction	D	0.3	0.3	0.5	NA	NA
Manufacturing	D	D	D	D	NA	NA
Transportation and public utilities	1.0	1.0	1.0	1.3	NA	NA
Wholesale trade	D	0.8	D	0.4	NA	NA
Retail trade	3.6	3.1	2.1	2.1	NA	NA
Finance, insurance, and real estate	0.3	0.3	0.3	0.4	NA	NA
Services	0.9	0.6	1.5	2.0	NA	NA
Government and government enterprises	6.0	6.1	6.0	6.2	NA	NA
Federal, civilian	2.4	2.0	1.9	2.1	NA	NA
Military	L	0.1	0.1	0.1	NA	NA
State and local	3.6	4.0	4.0	4.0	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Components of earnings are wages and salaries, other labor income, and proprietors' income.

2/ Other -- wages and salaries of U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

L Less than $50,000.

e Estimated by the author.

NA Not available

Table 12. - Earnings by major industry for Nye County, Nevada 1/
(Millions of $)

	1981	1982	1983	1984	1985 e/	1986 e/
Total	214.0	246.4	254.5	276.1	312.1	319.5
Farm	2.3	1.6	1.2	1.2	NA	NA
Nonfarm						
Agric serv, forestry, fisheries, & other 2/	D	D	D	D	NA	NA
Mining	43.9	43.7	36.4	39.8	28.2	36.0
Nonfuel mining e/	39.0	40.6	33.7	35.6	25.2	32.2
Construction	9.1	4.2	3.4	2.9	NA	NA
Manufacturing	2.3	2.6	1.6	1.9	NA	NA
Transportation and public utilities	4.7	D	D	D	NA	NA
Wholesale trade	D	0.6	0.3	0.3	NA	NA
Retail trade	5.0	5.7	5.2	5.5	NA	NA
Finance, insurance, and real estate	D	D	D	4.6	NA	NA
Services	127.9	166.9	182.7	197.7	NA	NA
Government and government enterprises	11.7	12.8	13.9	15.6	NA	NA
Federal, civilian	2.7	3.0	3.3	3.3	NA	NA
Military	1.2	0.8	0.8	0.8	NA	NA
State and local	7.9	9.0	9.8	11.5	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Components of earnings are wages and salaries, other labor income, and proprietors' income.

2/ Other -- wages and salaries of U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

e Estimated by the author.

NA Not available

Table 13. - Earnings by major industry for White Pine County, Nevada 1/
(Millions of $)

	1981	1982	1983	1984	e/ 1985	e/ 1986
Total	63.1	58.5	58.2	58.1	59.0	63.7
Farm	1.4	1.5	1.4	1.6	NA	NA
Nonfarm						
Agric serv, forestry, fisheries, & other 2/	L	D	D	D	NA	NA
Mining	11.3	10.1	13.4	15.6	14.1	24.4
Nonfuel mining e/	7.4	7.5	9.0	11.1	10.0	17.3
Construction	4.1	2.3	2.7	3.5	NA	NA
Manufacturing	11.4	9.8	6.6	0.8	NA	NA
Transportation and Public Utilities	5.8	6.7	6.7	6.9	NA	NA
Wholesale trade	1.0	D	D	D	NA	NA
Retail trade	7.2	6.7	6.7	7.5	NA	NA
Finance, insurance, and real estate	1.6	1.5	1.3	1.2	NA	NA
Services	7.1	7.3	6.4	6.8	NA	NA
Government and government enterprises	12.1	11.7	12.1	12.4	NA	NA
Federal, civilian	2.9	2.7	3.1	3.3	NA	NA
Military	0.1	0.1	0.1	0.1	NA	NA
State and local	9.1	8.8	8.9	9.0	NA	NA

Source: Bureau of Economic Analysis, U. S. Department of Commerce.

1/ Based on 1972 U.S. Standard Industrial Classification. Components of earnings are wages and salaries, other labor income, and proprietors' income.

2/ Other -- wages and salaries of U.S. residents working for international organizations in the U.S.

D Not shown to avoid disclosure of confidential information.

L Less than $50,000.

e Estimated by the author.

NA Not available

Table 14. - Estimated total impacts for all nonfuel mineral mining in Nevada
(Millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	6,555	5,696	5,338	5,918	5,478	5,924
Indirect	6,179	5,377	5,141	5,922	5,583	6,127
Total	12,734	11,073	10,479	11,840	11,061	12,051
Earnings 1/						
Direct	172.9	160.1	158.2	182.6	184.5	207.4
Indirect	122.9	115.2	114.1	136.9	142.1	160.5
Total	295.8	275.3	272.3	319.5	326.6	367.9
Indirect Business Taxes 2/						
Direct	3.1	3.4	7.3	6.7	7.0	NA
Indirect	2.7	3.0	6.5	5.9	6.2	NA
Total	5.8	6.4	13.8	12.6	13.2	NA
Property-type income 3/						
Direct	209.9	168.9	250.0	241.5	262.9	NA
Indirect	184.5	149.7	225.3	214.8	230.5	NA
Total	394.4	318.6	475.3	456.3	493.4	NA
Corporate profits before taxes						
Direct	125.6	86.9	161.2	149.3	166.3	315.3
Gross state product 4/ by industry						
Direct	385.9	332.4	415.5	430.8	454.4	675.2
Indirect	335.5	289.9	370.3	382.0	402.5	612.9
Total	721.4	622.3	785.8	812.8	856.9	1288.1

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

3/ Property-type income equals capital consumption allowances, business transfer payments, net interest paid, and corporate profits before taxes.

4/ Current dollar gross state product (GSP) is similar to gross national product for the Nation's economy, which expresses in dollars the market value of new goods and services produced for final use or not resold during a specified period of time. Gross state product equals earnings plus indirect business taxes plus property-type income. GSP for 1986 was estimated by extrapolating the 1985 value by the change in earnings plus corporate profits before taxes.

NA Not available

Table 15. - Estimated total impacts for gold and silver mining in Nevada (millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	2,568	2,246	2,597	3,659	3,627	4,524
Indirect	2,825	2,471	2,857	4,025	3,990	4,976
Total	5,393	4,717	5,454	7,684	7,617	9,500
Earnings 1/						
Direct	71.3	66.0	78.4	113.8	124.5	162.7
Indirect	57.0	52.8	62.7	91.0	99.6	130.2
Total	128.3	118.8	141.1	204.8	224.1	292.9
Indirect Business Taxes 2/						
Direct	1.7	2.0	5.5	4.7	5.1	NA
Indirect	1.6	1.9	5.2	4.4	4.8	NA
Total	3.3	3.9	10.7	9.1	9.9	NA
Property-type income 3/						
Direct	171.1	141.7	223.1	216.8	235.6	NA
Indirect	159.1	131.8	207.5	201.6	219.1	NA
Total	330.2	273.5	430.6	418.4	454.7	NA
Corporate profits before taxes						
Direct	118.1	89.3	160.1	144.7	159.4	310.0
Gross state product 4/ by industry						
Direct	244.1	209.7	307.0	335.3	365.2	608.1
Indirect	229.5	197.1	288.6	315.2	343.3	571.6
Total	473.6	406.8	595.6	650.5	708.5	1179.7

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

3/ Property-type income equals capital consumption allowances, business transfer payments, net interest paid, and corporate profits before taxes.

4/ Current dollar gross state product (GSP) is similar to gross national product for the Nation's economy, which expresses in dollars the market value of new goods and services produced for final use or not resold during a specified period of time. Gross state product equals earnings plus indirect business taxes plus property-type income. GSP for 1986 was estimated by extrapolating the 1985 value by the change in earnings plus corporate profits before taxes.

NA Not available

Table 16. - Estimated total impacts for nonfuel minerals other than gold and silver in Nevada
(Millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	3,987	3,450	2,741	2,259	1,851	1,400
Indirect	3,354	2,906	2,284	1,897	1,593	1,151
Total	7,341	6,356	5,025	4,156	3,444	2,551
Earnings 1/						
Direct	101.6	94.1	79.8	68.8	60.0	44.7
Indirect	65.9	62.4	51.4	45.9	42.5	30.3
Total	167.5	156.5	131.2	114.7	102.5	75.0
Indirect business taxes 2/						
Direct	1.4	1.4	1.8	2.0	1.9	NA
Indirect	1.1	1.1	1.3	1.5	1.4	NA
Total	2.5	2.5	3.1	3.5	3.3	NA
Property-type income 3/						
Direct	38.8	27.2	26.9	24.7	27.3	NA
Indirect	25.4	17.9	17.8	13.2	11.4	NA
Total	64.2	45.1	44.7	37.9	38.7	NA
Corporate profits before taxes						
Direct	7.5	-2.4	1.1	4.6	6.9	5.3
Gross state product 4/ by industry						
Direct	141.8	122.7	108.5	95.5	89.2	67.1
Indirect	106.0	92.8	81.7	66.8	59.2	41.3
Total	247.8	215.5	190.2	162.3	148.4	108.4

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

3/ Property-type income equals capital consumption allowances, business transfer payments, net interest paid, and corporate profits before taxes.

4/ Current dollar gross state product (GSP) is similar to gross national product for the Nation's economy, which expresses in dollars the market value of new goods and services produced for final use or not resold during a specified period of time. Gross state product equals earnings plus indirect business taxes plus property-type income. GSP for 1986 was estimated by extrapolating the 1985 value by the change in earnings plus corporate profits before taxes.

NA Not available

Table 17. - Estimated total impacts for all nonfuel mineral mining in Elko County, Nevada (Millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	598	611	475	519	560	580
Indirect	359	367	285	311	300	348
Total	957	978	760	830	860	928
Earnings 1/						
Direct	14.0	14.5	12.4	14.2	17.1	18.4
Indirect	5.6	5.8	5.0	5.7	6.8	7.4
Total	19.6	20.3	17.4	19.9	23.9	25.8
Indirect Business Taxes 2/						
Direct	0.1	0.7	1.7	1.3	1.4	NA
Indirect	L	0.4	0.9	0.6	0.7	NA
Total	0.1	1.1	2.6	1.9	2.1	NA

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

NA Not available L Less than $50.000

Table 18. - Estimated total impacts for all nonfuel mineral mining in Eureka County, Nevada
(Millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	366	318	307	480	642	790
Indirect	73	65	61	96	128	158
Total	439	383	368	576	770	948
Earnings 1/						
Direct	9.2	9.1	10.0	14.9	22.3	28.4
Indirect	0.9	0.9	1.0	1.5	2.2	2.8
Total	10.1	10.0	11.0	16.4	24.5	31.2
Indirect Business Taxes 2/						
Direct	0.6	0.4	1.0	0.9	0.7	NA
Indirect	0.1	L	0.1	0.3	0.1	NA
Total	0.7	0.4	1.1	1.2	0.8	NA

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

NA Not available L Less than $50.000

Table 19. - Estimated total impacts for all nonfuel mineral mining in Lander County, Nevada
(Millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	966	880	748	809	840	735
Indirect	290	264	224	243	252	221
Total	1,256	1,144	972	1,052	1,092	956
Earnings 1/						
Direct	23.5	23.7	22.3	25.0	29.2	26.4
Indirect	4.7	4.7	4.5	5.0	5.8	5.3
Total	28.2	28.4	26.8	30.0	35.0	31.7
Indirect Business Taxes 2/						
Direct	0.5	0.4	0.5	0.5	0.9	NA
Indirect	0.1	0.1	0.1	0.1	0.2	NA
Total	0.6	0.5	0.6	0.6	1.1	NA

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

NA Not available

Table 20. - Estimated total impacts for all nonfuel mineral mining in Nye County, Nevada
(Millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	1,384	1,348	1,053	1,105	726	895
Indirect	415	404	316	332	218	269
Total	1,799	1,752	1,369	1,437	944	1,164
Earnings 1/						
Direct	39.0	40.6	33.7	35.6	25.2	32.2
Indirect	7.8	8.1	6.7	7.1	5.0	6.4
Total	46.8	48.7	40.4	42.7	30.2	38.6
Indirect Business Taxes 2/						
Direct	0.3	0.3	0.9	0.7	0.7	NA
Indirect	0.1	0.1	0.2	0.1	0.1	NA
Total	0.4	0.4	1.1	0.8	0.8	NA

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

NA Not available

Table 21. - Estimated total impacts for all nonfuel mineral mining in White Pine County, Nevada
(Millions of $)

	1981	1982	1983	1984	1985	1986
Employment 1/ (Number)						
Direct	350	271	277	341	288	480
Indirect	210	163	166	205	173	288
Total	560	434	443	546	461	768
Earnings 1/						
Direct	7.4	7.5	9.0	11.1	10.0	17.3
Indirect	3.0	3.0	3.6	4.4	4.0	6.9
Total	10.4	10.5	12.6	15.5	14.0	24.2
Indirect Business Taxes 2/						
Direct	0.3	0.3	0.7	0.4	0.3	NA
Indirect	0.2	0.2	0.4	0.2	0.2	NA
Total	0.5	0.5	1.1	0.6	0.5	NA

1/ Employment equals full and part-time wage and salary employees plus proprietors. Components of earnings are wages and salaries, other labor income, and proprietors' income. The direct impacts do not include mining services. Employment and earnings for these industries are included in the indirect effects.

2/ Net proceeds of mines taxes plus property taxes.

NA Not available